

Excavations and Survey at Androna, Syria: The Oxford Team 2000

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The third season of excavation at Androna (modern Andarin) took place in autumn 2000. The work of the Oxford team in 1998 and 1999 has been reported elsewhere.¹ The nature of the site, once a large and flourishing *kome* situated in the so-called basalt massif of north central Syria, and the current international archaeological project (Syrian-British-German) are described in the report on the 1999 season published in *DOP* 56 (2002). The main aims of this project are to elucidate the diachronic development (from Roman to Islamic) of Androna's resources, defense, size, and spatial organization by means of survey and excavation. The Oxford team is concentrating on questions relating to the sources and use of water at this desert site. We have accordingly been excavating a mid-sixth-century public bath at the center of the site, studying the extramural reservoirs,² and investigating all evidence relating to agriculture. Our work continued in 2000 with the excavation of the bath, where our principal objectives were to complete excavation of the main rooms and to investigate its heat and water supply.³

¹ For 1998 see M. Mundell Mango, "Oxford Excavations at Andarin (Androna): September 1998," with contributions by M. Decker, C. Mango, N. Pollard, C. Salter, and A. Wilson, *AArchArSyr* (in press); C. Strube and M. Mundell Mango, "Excavations at Andarin/Androna," in *Syrie moyenne de la mer à la steppe* (Damascus, in press). For 1999 see M. Mundell Mango, "Excavations and Survey at Androna, Syria: The Oxford Team 1999," *DOP* 56 (2002): 307–15; eadem, "Oxford Excavations at Andarin (Androna), September 1999," *AArchArSyr* (in press).

² See the 1999 report, *DOP* 56 (2002): figs. 20–21.

³ Members of the Oxford team in 2000 were: Dr. M. Mango, director; Dr. Jonathan Bardill, Dr. Robert Hoyland, Antonietta Lerz, Prof. Cyril Mango, Anne McCabe, Dr. Nigel Pollard, and Agnès Vokaer, archaeologists; Richard Anderson, architect and kite photographer. We were joined by Syrian archaeologist Afamiya al-Qasab. Our

THE BATH

The excavated bath will provide both an example of mid-sixth-century bath architecture in a nonurban setting and an index to the financial and technological resources available at Androna in the Byzantine period and later. Three seasons of excavation have revealed a basalt and brick building (40 × 23 m) divided into four parts: the entrance court on the east, the *frigidarium* on the north, the *tepidarium* and *caldarium* rooms on the south, and the service area on the west (Fig. 1). The bath's technology (of water and heat) is being studied in detail. The relatively large size and costly decoration of the building (in marble, glass wall mosaics, wall painting)⁴ suggest a high level of funding. This is complemented by the pretentious verse inscriptions executed in high relief, which record the building of the bath by a certain Thomas soon after he built the *kastron* opposite in 558–9.

The East Entrance Court (supervised 2000 by C. Mango, A. al-Qasab)

Most of the entrance court (Fig. 2) was excavated in 1998 and 1999. Some discoveries made

local workmen and women numbered 22. Excavation took place during the month of September. The season's work was supported by generous grants from Dumbarton Oaks and by the Craven Committee and Modern History Faculty of the University of Oxford. For support in securing funds, we are grateful to Prof. Averil Cameron, Mr. James Crow, Prof. Clive Foss, and Prof. Jean-Pierre Sodini. I should like to thank Bob Wilkins and Ian Cartwright of the Institute of Archaeology, Oxford, for making the photographic prints for this article. The following report on the excavation of the bath building is based on the notes written by the respective trench supervisors identified below and on personal observation.

⁴ See the 1999 report, *DOP* 56 (2002): 309–12, figs. 11–14.

in 2000 relate to the period after the bath went out of use and, possibly, to the period of the destruction of the building or part thereof. Evidence suggesting the latter came from its cistern, whose mouth was uncovered in the center of the court in 1999. In 2000 drain holes feeding the cistern with rainwater carried down from the peristyle roof were located in the four corners of the inner court which had been left unpaved (B395, B404, B405, B492). The ceramic pipe (diam. 6.5 cm) remained *in situ* in the drain by the southeast pier. When emptied, the carafe-shaped cistern (5.12 m deep; diam. 3.85 m) was found to contain a variety of materials. Some, such as the copious amount of pottery found on the bottom, probably fell there while the cistern was in use; the same explanation may apply to some of the glassware found. Other items, such as the numerous animal bones, were thrown there after the cistern went out of use. The building material found in the cistern, including masonry blocks, channeled slabs, colonnettes, capitals, balusters, and an elaborately carved slab (Fig. 5), may relate to the destruction of the bath and come from some part of the building, possibly the court itself. The same may be said concerning the large pieces of charcoal found in the cistern which resemble building timbers—possibly beams from the court roof—rather than fuel. These may attest to a destruction by fire after which the burned beams and masonry were thrown down the cistern. The arrowhead recovered from the cistern (context B403) may have been in use on the occasion of destruction. Future radiocarbon tests on selected charcoal and animal bones could confirm the chronology of the destruction of the court.

The other main area of excavation in the east court in 2000 uncovered evidence of alterations made to the court, probably after the bath ceased to function. In the south part of the court, particularly in the peristyle, the unexcavated collapsed masonry afforded an opportunity to study both the original construction of the court and the sequence of its collapse. It also revealed later construction. The east end of the south aisle and the east aisle of the court (Figs. 2, 3) were found to be occupied by later constructions of mud-brick (remaining up to 0.50 m high: B429a) and of mud-brick and reused stone (B429, B488, B490, B491, B498?). This phase of building apparently corre-

sponded to that of the mud-brick noted nearby beneath collapsed arches of the court (B487) (Fig. 4) and elsewhere in the court as described in the 1999 report. These finds indicate postbath building prior to the final collapse of the court's superstructure. Pavement slabs were removed from the west end of the south aisle (B486) before the collapse. Further prime evidence relating to a postbath period is provided by the round structure (B104/B148) uncovered in 1998 and 1999 to the west of the court's center (Fig. 2), built directly onto the sixth-century stone pavement and identified possibly as a kiln.⁵ The chronological sequence of the later structures in the south and east aisles, of the collapse of the superstructure of the west aisle (where a jar standing upright in the corner [B99] still held sixth–seventh-century Byzantine coins in 1998) and elsewhere, and of the building of the kiln near the center of the court still needs to be elucidated through further study.

The North Frigidarium (supervised by A. Lerz)

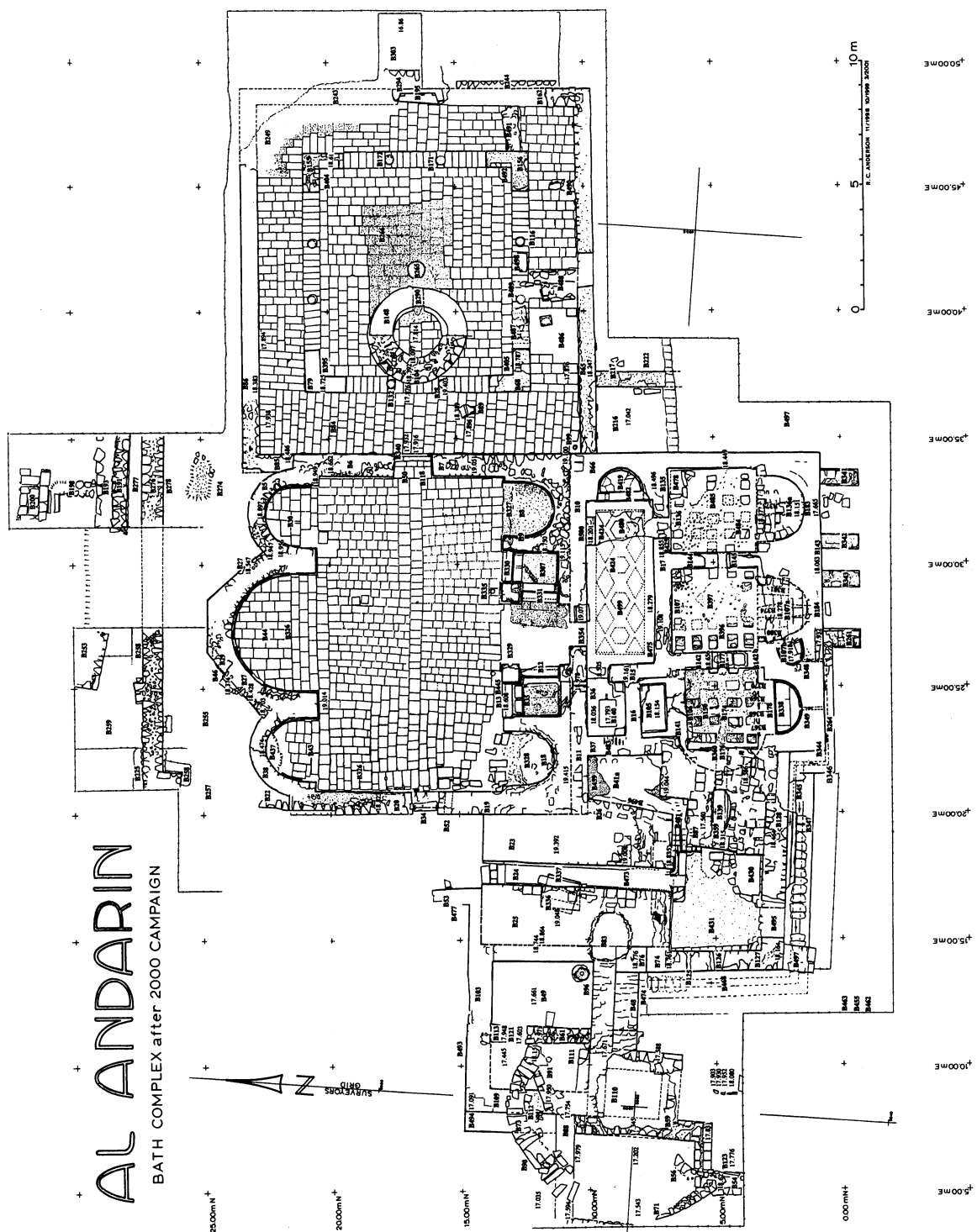
In 2000 we removed from the *frigidarium* the walls of the modern *qubbe* complex built over the central apse and west side of this hall which we had excavated in 1998 and 1999.⁶ Their removal better revealed the broad expanse of the bath's main hall which is ca. 12.50 m wide (Fig. 6). We also finished excavating the northwest apse (B43) and uncovered drains there (B437) and on the south side of the hall in front of the west pool (B445). We continued to find fragments of the marble and wall mosaic decoration of the hall.

The South Tepidarium and Caldaria (supervised by M. Mango, A. Lerz, A. McCabe)

In 1998 and 1999 we excavated the west side of the south section, including a small room (B36) with a small pool (B140) off the *tepidarium* and, to the south, a room (B106) with marble-lined oblong (B105) and semicircular (B338) pools. In 2000 excavation continued first in the other two *caldarium* rooms on the south and then in the *tepidarium* to the north. Of the two *caldarium* rooms excavated, that in the center of the three rooms, B107, measures 3.43 × 3.40 m and that on the east, room B136, is 3.42 × 3.36

⁵ See discussion *ibid.*

⁶ See the 1999 report, *DOP* 56 (2002): 309–10.



1 Androna, plan of bath as excavated in 2000, by R. C. Anderson.



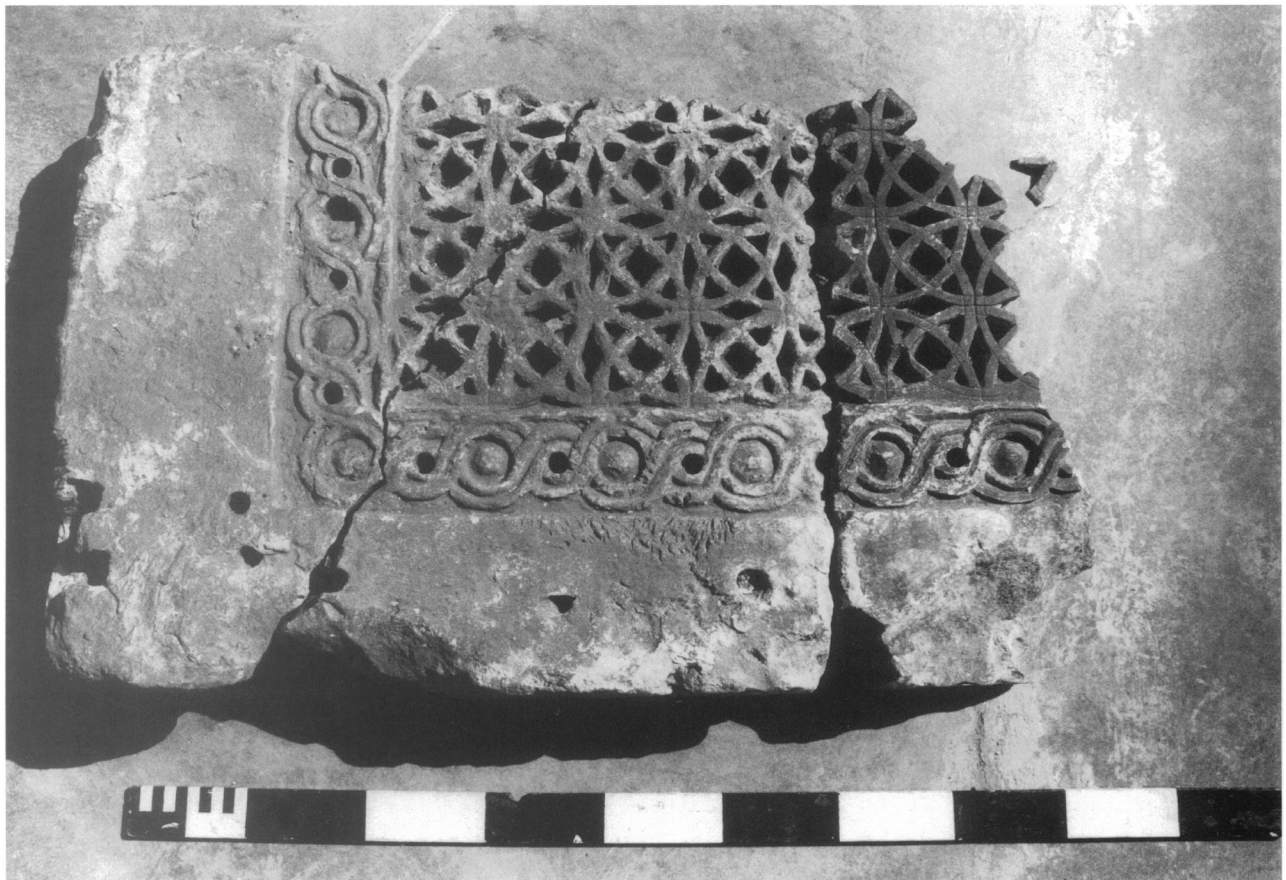
2 Androna, bath, east entrance court looking west, showing remains of L-shaped piers and columns, the Umayyad (?) kiln in the center, and later masonry on the left (photo: M. Mango)



3 Androna, bath, east entrance court, south aisle looking west toward later masonry. Southeast corner of the court in the foreground (photo: M. Mango)



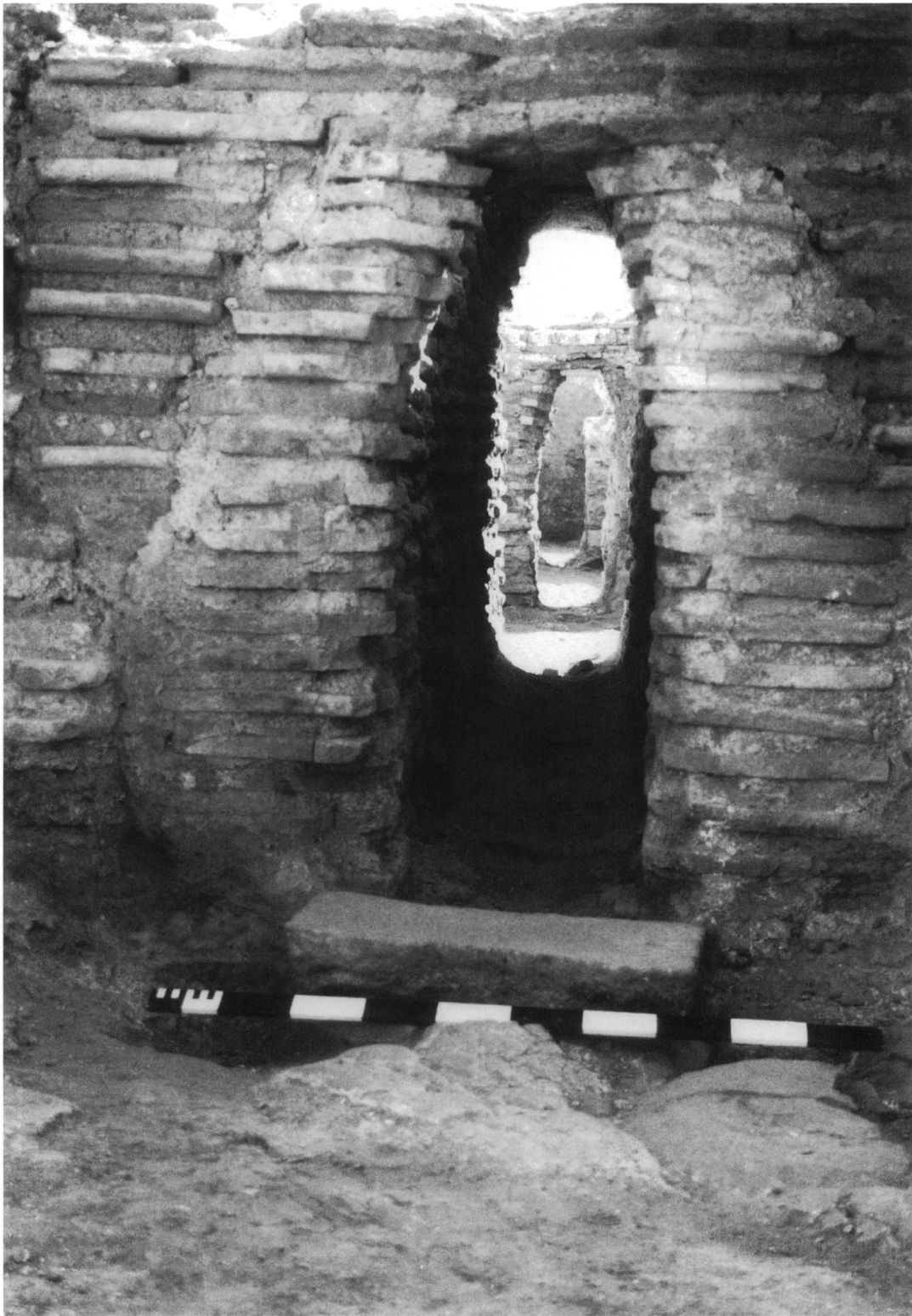
4 Androna, bath, east entrance court, south aisle looking north to collapsed arch of peristyle (photo: M. Mango)



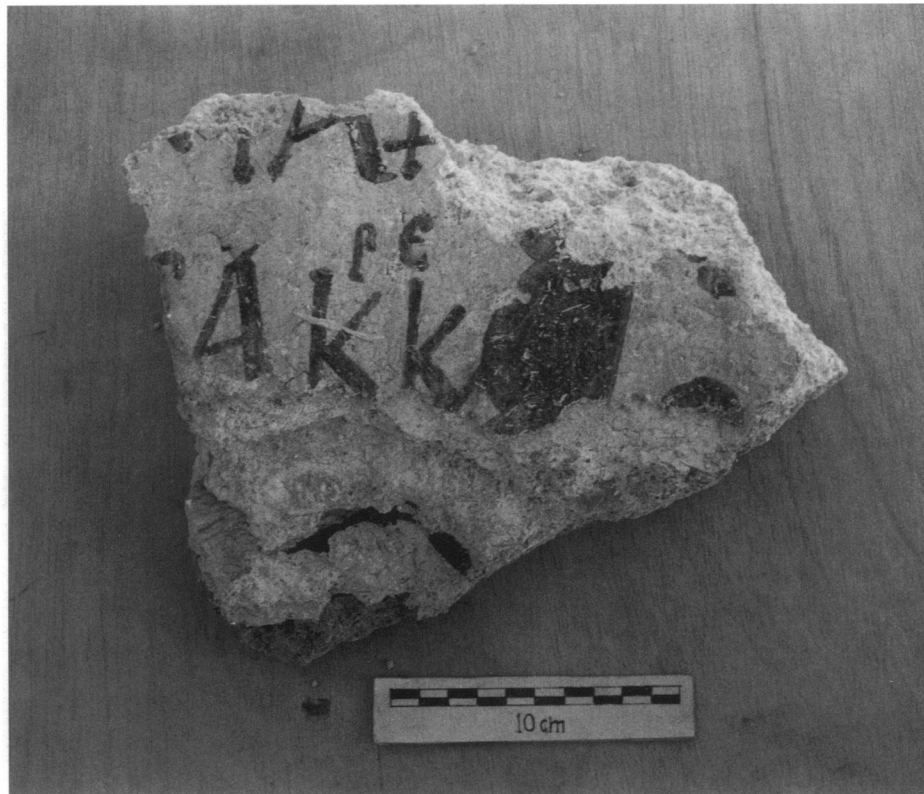
5 Androna, bath, east entrance court, carved slab removed from the cistern (photo: M. Mango)



6 Androna, bath, *frigidarium*, general view east to entrance court. On the right are the two cold pools (photo: M. Mango)



7 Androna, bath, *caldaria*, view east through the west furnace and the passages between the three hypocausts (photo: M. Mango)



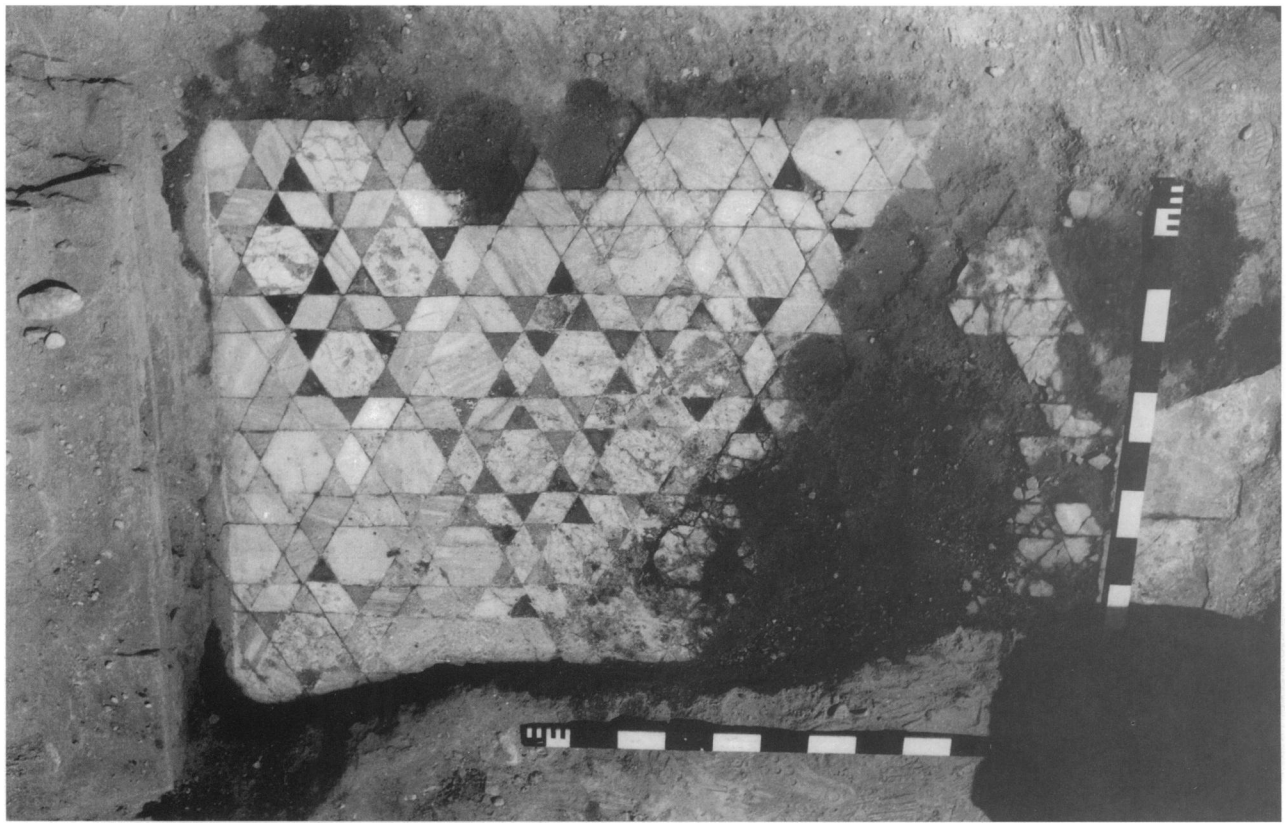
- 8 Androna, bath, east *caldarium*, fragment of painted plaster with Greek inscription enclosed in a red wreath (photo: M. Mango)



- 9 Androna, bath, east *caldarium*, general view north toward *tepidarium* with its door blocked. Heating vents in the north wall visible on the upper right and the later low construction in the northeast corner in the lower right (photo: M. Mango)



- 10 Androna, bath, *tepidarium*, general view west before the pavement was uncovered. The stone trough is on the right, and the bench built against the north wall, on the far right (photo: M. Mango)



11 Androna, bath, *tepidarium*, marble *opus sectile* pavement uncovered at east end, looking south. Charcoal deposit visible on the far right and the blocked south door in the background (photo: M. Mango)



12 Androna, bath, service area on west, elevated water tank, tessellated pavement remaining on north side, looking north. Remains of channels through the east wall on the right (photo: C. Mango)



13 Androna, bath, service area on west, two blocks of water channel(s) found in or near the elevated water tank (photo: M. Mango)



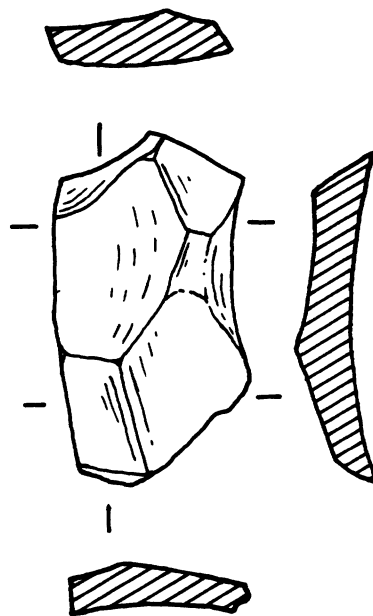
14 Androna, bath, service area on west, south end of wheel house looking north at lime incrustations on walls, on the floor to the right, around the corner, and on the stairs leading up on the far right (photo M. Mango)



15 Androna, bath, service area on west, partially excavated well used for the bath, looking north (photo: M. Mango)



16 Androna, bath, *unguentaria* retrieved from the disused well in the wheel house (photo M. Mango)



17 Androna, bath, fragment of faceted “bleached” glass vessel (drawing by A. Wilkins)

m. Like room B106 on the west emptied in 1999,⁷ both were found to have collapsed into the hypocausts below. Both rooms had a semi-circular pool on the south partially uncovered in 1998, of which only the substructures (B107a, B136a) survive, as do parts of a second smaller marble-lined pool (B107b) in the central room.⁸ Remains excavated in the hypocausts included decorative and other material from the two collapsed upper rooms. We recovered slabs of white tessellated paving as well as copious amounts of loose tesserae measuring ca. 2 cm³. Among the numerous pieces of decoratively painted plaster retrieved were some ornamented with red or orange wreaths enclosing black fragmentary Greek inscriptions (Fig. 8). We also found loose flues and pipes, and in the hypocaust of room B107 a fragmentary flour mill. The *pilae* of the two hypocausts had been largely robbed out, and only occasional stubs (B396, B484) are preserved on the floors (B397, B485) (Fig. 9). Ash 0.10 and 0.17 m thick remained on parts of the floors of B107 and B136, respectively. Heating shafts opened under the south pools in both rooms: three (B374, B380, B381) in the center room and one (B375) in the east room. Stoke holes in the south façades of the center (B184) and east (B183) hypocausts led into B374 and B375. When these heating shafts and the four in room B106 (B367–B370), the hypocaust floors, the passages between hypocausts, and the furnaces and stoking holes on the west (B359, B176) and south were excavated (Fig. 7), twenty-four large bags of ash and soil were sampled for flotation, which should yield evidence of the fuel used to heat the bath. Also sampled was postbath industrial waste recovered from the eastern hypocaust, where a low trough or platform (1.13 × 0.75 m) of basalt walls and mud-brick floor was inserted into the northeast corner (B478) (Fig. 9).

The final area on the south to be excavated was the *tepidarium* (7.85 × 2.63 m), a long, narrow space (B499) with a curved wall at the east end, and a small room (B36) with a shallow pool (B140) at the west end. Two heating vents high in the north wall (B135) of the southeast hypocaust were uncovered leading under the *tepidarium* floor. Below these vents a T-junction

heating pipe was found loose at floor level (Fig. 9). In 1998 the upper part of the walls (B17, B66, B10, B15) of the *tepidarium* was uncovered, and the small room B36 was excavated to floor level. In the north center of the main room stood a basalt trough (0.99 × 0.59–0.71 × 0.28 m) at 0.38 m above bath floor level (Fig. 10). The doorway in the south wall had been blocked with large stones to a height of 0.40 m (Fig. 9). Excavation in 2000 commenced at the east end of the room with the semicircular marble-lined pool (B419), which was found to contain, in addition to rubble (mortar, bricks, basalt blocks), remains of mud-brick and deposits of charcoal and other industrial waste. Extending excavation to the west in the direction of the trough (Fig. 11), we exposed a marble *opus sectile* pavement (B480) whose decorative composition is based on a hexagonal star pattern made up of white, pink, light and darker blue, and black marbles (Fig. 11). This had an outer white marble border extant only on the south side. At 2.8 m west of the ledge of the semicircular pool we encountered a metallic substance adhering to the center of the pavement and a large deposit of charcoal piled against the bench (B500) built against the north wall just east of the trough. Near the surface of the area around the trough we encountered more charcoal, slag, and a dozen smithing hearth bottoms (diam. 11–15 cm). Because of the complexity of the evidence confronting us and the shortness of time left, we postponed further work, covering the marble pavement and leaving the rest of the room unexcavated. On moving the trough out into the *frigidarium*, we noted under it the top of a loose stone construction. We deduced from the recovered evidence that a metal workshop had been installed in the *tepidarium* after the bath went out of use, probably in the Umayyad period. A selection of the metalworking material was taken to Oxford where it is currently being studied by Chris Salter of the Materials Department. He will provide specialist advice on the future excavation of this area in 2001.

The West Service Area (supervised by C. Mango, R. Hoyland, A. al-Qasab, A. Lerz, A. McCabe)

Only at the end of the 1999 season did we start to investigate the service area (partly excavated in 1998), and we continued this work in

⁷ Ibid., 312, fig. 15.

⁸ Ibid., fig. 16.

2000. In particular, we unblocked the narrow passage (B24) formed by two massive brick constructions (B23, B25) aligned north-south against the west wall (B19) of the bath. At the south end the stack of bricks uncovered in 1999 was removed for storage after dimensions and other features were recorded. The floor underneath (B473) and a layer of rubble (B411) were revealed. In the west wall of the passage we uncovered a broad north-south arch (B336)⁹ under which was sunk a vertical shaft (ca. 1.25 × 1.25 m in plan) (B337), positioned at an oblique angle to the passage and arch. Given the low height of the arch, its construction must have prevented raising water from the well, which then fell out of use. We emptied this disused well to a depth of 10 m, not quite reaching the bottom. The well was full of a dark loamy soil containing animal bones, charcoal, pottery, and other artifacts. We sampled twenty-one bags of material from the well while emptying it. The passage we took to be the wheel house, where water was lifted from ground level to elevated tanks by means of *saqiya* jars (many of which were excavated 1998–2000) strapped to a wheel.¹⁰ Above the wheel house, to the east, we exposed an elevated water tank (min. ca. 3 × 2 m) (B41a) with a white tessellated floor (B459) composed of smaller tesserae than those used in the *caldarium* rooms (Fig. 12). A block from a water channel (Fig. 13), possibly once used to conduct water to the tank, was found reused in a later cross wall abutting wall B496; the wall was removed. A channel leads through the west wall (B26) into the tank, while other channels (B483) lead through the east wall (B37) from the tank into room B36, part of the *tepidarium*. Another channel (B496) runs at the base of the west wall of the tank. On the narrow stone stairway (B481) below the tank to the south, overflow water ran down and back into the passage (B24) and flowed down the disused well (B337) then used as a drain (Fig. 14). The path of the water is indicated by thick lime incrustations on floors and walls. Elsewhere in this area we encountered other substantial incrustations. On six successive days we removed from the well (B337) what appeared to be lengths of wood totaling 3 m, but which, upon microscopic exam-

ination by Dr. Mark Robinson in Oxford, proved to be a conglomeration of plant debris formed by calcium carbonate from water seepage deposited on it.

We also began excavation of a well further west (ca. 2.75 × 2.75 m in plan) (Fig. 15), identified by its sunken surface (B110). This well is situated close to the low curved wall (B73) to the north that may be associated with a *saqiya* device.¹¹ We excavated down to a level of about 3 m, encountering relatively few finds. Because of the well's collapsing basalt stone masonry, further work was postponed until the depth of the first, disused well (B337) was determined.

We continued excavation of the west furnace forecourt, clearing the south doorway (B495) and a short wall (B497) projecting south to the west of it. We also investigated a pit (1.33 × 0.85 m) (B430) situated in the southeast corner of the forecourt, beside the entrance to the furnace. This pit contained a thick layer of ash, charcoal (which we sampled), and many nails. We resumed excavation of the bath's drainage system built at two levels against the outer south and west walls of the bath (B264, B344–B348, B468), into which the *caldarium* pools of rooms B106 and B107 emptied.

We extended work at both the southwest and southeast exterior corners of the bath in the general vicinity of the west and south furnaces. Unsurprisingly we encountered a good amount of ash. At the southwest end at the east face of the north-south trench west of the bath, we found deposits of black ash (e.g., B462) alternating with others of masonry (e.g., B463) and soil (one with eggshells). Within one layer of ash stood an urn-shaped pot. Another north-south trench 2 m east of the southeast corner of the bath revealed a top layer of brown soil above another of white mortar sloping to the south. This rested on brown soil and then a layer of black ash on top of hard, red earth. These levels await reconciliation with those found in earlier excavation along the south wall of the bath.

In a room (B49) immediately west of the wheel house we emptied a receptacle set into the tiled floor and partially uncovered in 1998. This proved to be a hearth (0.77 × 0.73 m) (B96), whose ashy contents we sampled. At the

⁹ Ibid., 313, fig. 18.

¹⁰ A complete jar excavated in 1998 is illustrated *ibid.*, fig. 19.8.

¹¹ See the discussion in the 1999 report, *DOP* 56 (2002): 313.

end of the season we started to investigate the area along the base of the north wall (B493) of the west service area.

THE SMALL FINDS

During the 2000 season the contents of the cistern (B265) in the east court and the disused well (B337) in the west service area greatly increased the total pottery finds to date. These recent finds included nine fragments of *unguentaria*, some of them stamped (Fig. 16),¹² and twenty-one fragments of lamps. The pottery continues to be studied by Dr. Nigel Pollard, who states that, overall, our pottery profile remains that outlined in the 1999 report.¹³ Agnès Vokaer studied and sampled (for petrographic analysis) the finds of Brittleware, which she compared with related finds from Apamea and from the citadel excavation at Aleppo, as part of an M.Litt. thesis at Oxford University.¹⁴ Glass finds in 2000 included many fragments of unguent or perfume flasks and stemmed goblets, as well as sherds of hanging and stemmed lamps, bottles and bangles, and loose vessel handles. There were also two pieces with impressed honeycomb and petal patterns. Finds made in

1998 and 1999 included fragments of “bleached” (clear, nearly white) glass, considered a luxury product, some of which have a ground faceted surface (B1; Fig. 17), including a piece with a base engraved with a star (context B232), as found on rock crystal, silver, and other high-value vessels, some perhaps associated with Alexandria.¹⁵ Glass production at Androna is suggested by a small slab (14.5 × 7.5 cm) of dark green glass and similar fragments found in 2000 in the disused well (B337) (contexts B387, B436). Some of this glass has been sampled for analysis by Prof. Julian Henderson.¹⁶

POSTEXCAVATION SCIENTIFIC STUDY

Charcoal, botanical samples, metallurgical material, some of the numerous animal bones recovered, and fragments of glass vessels and material were removed from Syria in 2000 with the authorization of the Director General of Antiquities and Museums, Damascus, and are currently being studied at Oxford and Nottingham.

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¹² Four hundred fragments with fifty stamps were found at Sarāḫane in Istanbul. J. W. Hayes, *Excavations at Sarāḫane in Istanbul. Volume 2. The Pottery* (Princeton, N.J.—Washington, D.C., 1992), 8–9, fig. 1.21–24.

¹³ See the 1999 report, *DOP* 56 (2002): 314, fig. 19.

¹⁴ Entitled “Typological and Technological Study of Byzantine Brittle Ware (Syria),” completed 2001.

¹⁵ See M. Mundell Mango, “Byzantine, Sasanian and Central Asian Silver,” in *Kontakte zwischen Iran, Byzanz und der Steppe in 6–7. Jh.*, *Varia Archaeologica Hungarica* 9, ed. Cs. Bálint (Budapest, 2000), 273, fig. 8; M. Vickers, “Roman Facetted Silver and Its Relationship to Rock Crystal and Glass,” *Silver Society Journal* (1966): 463.

¹⁶ I should like to thank Dr. Esther Cameron of the Institute of Archaeology at Oxford for taking the samples.